UNCLASSIFIED

Information Science and Technology Seminar Speaker Series

Patrick Rubin-Delanchy
University of Bristol

Dynamic Network Data: Applications, Challenges, Results

Wednesday, November 5, 2014

3:00 - 4:00 PM

TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)

Abstract: We start with an application in cyber-security and illustrate how many problems therein can be abstracted to the analysis of a point process network, or a graph with (marked) point processes occurring on every edge. We show how this structure usefully characterises many other modern datasets. Next some recurring and important statistical themes are identified, for example, measuring information flow, network anomaly detection, and big data. Finally we present some new results and methodology for these problems, including testing for dependence between point processes, calibrating and combining Bayesian p-values, or performing distributed Monte Carlo tests.

Biography: Patrick Rubin-Delanchy obtained a PhD in Statistics at Imperial College London in 2008, supervised by Professor Andrew Walden. He was a research associate at Imperial College London and then the University of Arizona, before becoming a Heilbronn Research Fellow at the University of Bristol. His research interests include Monte Carlo computation, hypothesis testing and Bayesian inference, with applications in biology, artificial intelligence and cyber-security.

For more information contact the technical host Melissa Turcotte, mturcotte@lanl.gov, 505-360-6561.

Hosted by the Information Science and Technology Institute (ISTI)

Los Alamos NATIONAL LABORATORY EST. 1943

ISTI INFORMATION SCIENCE & TECHNOLOGY INSTITUTE